UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES
WASHINGTON, D.C. 20460

December 4, 2001

MEMORANDUM

SUBJECT: **Oxyfluorfen:** Response to Phase 1 Occupational/Residential Exposure (ORE) Comments Submitted by Dow Agrosciences on November 1, 2001
[Case # 819447, PC Code 111601, DP Barcode D279273]

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The following is in reference to "Dow Agrosciences' (DAS) Response to the U.S. EPA's Human Health Risk Assessment for Oxyfluorfen" of November 1, 2001. This response was submitted following the Phase 1 review period. Although this review period is intended to address "error only" comments, an attempt was made by the Agency to address all of the ORE comments in the DAS response. The ORE chapter for oxyfluorfen has also been revised.

DAS Comment - Actual Exposure from Shearing of Christmas Trees is Extremely Low

DAS contends that the actual exposure from the shearing of Christmas tree is extremely low because the no physical contact occurs between the worker and the tree. DAS explains that a long thin knife or power blade is used to shear the tree.

The transfer coefficient of 3000 cm^2 used in this assessment as given in ExpoSac Policy #003.1

"Agricultural Transfer Coefficients" was derived from a citrus hand pruning dermal exposure study (MRID 430627). The range of values measured during this study was 1120 to 4930 cm^2/hour and the value selected for inclusion in the ExpoSac policy was 3000 cm^2/hour. As there are no studies of shearing Christmas trees, the transfer coefficient for pruning citrus was chosen to represent the shearing exposure. It is understood that this transfer coefficient probably overestimates the shearing exposure, however, the degree of overestimation is not known. Because Oxyfluorfen is typically applied in a semi-directed manner around the trees, some over-spray would contact the lower branches and possibly be transferred to the worker's clothing as he or she brushed against the tree.
Additional information to include a videotape demonstration of tree shearing and possibly an exposure study may be needed to fully resolve this issue.

DAS Comment - Residential Post-Application Exposure and Risk

DAS contends that residential post application exposure following oxyfluorfen application to brick patios and similar surfaces would be low because of the absorptive characteristics of brick and because lesser activity would occur on these hard abrasive surfaces than predicted by the transfer coefficients listed in the SOP for Residential Exposure Assessments.

This issue was discussed by the ExpoSac on 11/29/01 and was it decided that the SOP assumptions were not appropriate for the above scenario and that the exposure could not be accurately evaluated.
The ORE chapter was revised to reflect this decision.

DAS Comment - The maximum screening values of 10 and 30 days worked for farmers and commercial applicators respectively should not be used for the calculation of cancer risks.

DAS contends that the average number of days that a person handling/applying oxyfluorfen would be less than the above values.

These values were used by the Agency for screening purposes and were characterized as conservative. Risk managers should take this into consideration when deciding upon the implementation of the requirements outlined in the 1996 Barolo memo on cancer risk mitigation. If a $1x10^{-4}$ cancer risk is the target, the risks as calculated using screening level values would be acceptable with single layer PPE. If the 10^{-6} risk range is desired, then engineering controls would be required for some scenarios and additional use data might be needed to refine the risk and justify the cost.

DAS Comment - Risk Mitigation

DAS stated that most labels require gloves and that respiratory protection might not be necessary. They wanted to have the risks calculated with and without respirators to determine their effect upon exposure.

The Agency recalculated the handler risks using a tiered approach which started with baseline PPE and added additional layers of PPE and levels of respirator protection. Single layer PPE (ie gloves)

without respirators yielded acceptable non-cancer risks (MOEs were above 100) and possibly acceptable cancer risks that were less than 1.0×10^{-4}. Again, the amount of mitigation needed will depend upon how the 1996 Barolo memo is implemented.

DAS Comment - Post Application Worker Risk Characterization

This comment involves the assumed number of days per year (10 and 30) that farmers and commercial workers experience post application exposure to oxyfluorfen. These were chosen by the Agency as screening level values and were characterized by the Agency as being conservative. Additional information regarding the timing of post application activities such as shearing with respect to oxyfluorfen applications could be used to refine these risk estimates.